

REMARKS

This responds to the Office Action mailed November 13, 2002. Claims 4-12 and 20-27 are now pending. Claims 1, 2, 6-8, 12-17 and 19 were rejected under 35 U.S.C. §102(b), claims 3 and 16 were also rejected under 35 U.S.C. §103. Claims 4, 5, 9, 10 and 11 were each indicated as allowable if rewritten in independent form. Reconsideration is respectfully requested.

Cross Reference

Applicants thank the Examiner for pointing out the omission of information at page 12, line 18 caused by the concurrent filing of that application with the instant application. The Specification, at page 12, has been amended to now identify the serial number of that application.

Drawing Objections

In the Office Action, the drawings were objected to because "Figures 1-7, 12, 13, 15, 16A-D, 17-19, 20A, B, 22 and 23 are each composed of multiple Figures which must each be separately identified," the carrier of Figure 16A "shows the emitters as being buried in the layer" and that lettering in Figure 16B is partly obscured.

With respect to the "multiple figure" portion of the objection, the objection is respectfully traversed with respect to Figures 3, 4, 6, 7, 16C and 16D.

In particular, with respect to Figure 3 it is respectfully submitted the figure is not made up of multiple figures, but rather constitutes a single figure showing two pieces that are to be superimposed (shown as such in FIG. 4) as such, it is respectfully submitted that FIG. 3 is properly labeled as a single figure. Withdrawal of the objection to Figure 3 is requested. With respect to Figure 4, the objection is not understood since it is a single discrete figure.

Withdrawal of the objection to Figure 4 is requested. With respect to Figures 6 and 7, the objections are not understood since they already contain separate labels, i.e. “a)” through “d)” in the case of Fig. 6; and “a)” through “f)” in the case of Fig. 7. With respect to Figures 16C and 16D, those figures are each also not made up of multiple figures, but rather constitute single figures showing two aligned pieces that are to be attached. As such, it is respectfully submitted that FIG. 16C and FIG. 16D are each properly labeled as single figures. Withdrawal of the objections to Figure 16C and Figure 16D are requested.

Withdrawal or clarification of the objections with respect to each of Figs. 3, 4, 6, 7, 16C and 16D are respectfully requested.

With respect to Figure 16A, the Examiner has stated that figure shows the emitter buried in the layer and, if so, that it is not supported by the specification. The Examiner’s objection is not fully understood. Both the application and figure refer to attaching a “carrier” There is nothing in either that requires the carrier to be exclusively on top of the devices – only that it be attached to the devices. Thus, for example, an epoxy that is applied and then cured to become the carrier could as readily be an “attaching” of the carrier as could be bonding of a pre-formed piece of insulator only to the upper surface. Moreover, it is recognized that the originally filed drawings provide support as readily as the text and originally filed claims (See e.g. M.P.E.P. §2163.02). Withdrawal of the objection to Figure 16A on this point or further clarification of the basis for the objection is respectfully requested.

With respect to the figures identified in the objection (other than figures 3, 4, 6, 7, 16C and 16D) proposed amendments are submitted herewith for FIGS. 1, 2, 5, 12, 13, 15, 16A-B, 17-19, 20A, 20B, 22 and 23 in two forms, first, with the proposed changes identified in red ink and

second, in fully amended form. Upon the indication that all claims are allowable, formal drawings incorporating all the above corrections, if approved, and addressing the draftsman's informalities will be provided.

In particular, Figures 1 and 2 have been amended to separately identify the step components of the figures as "i)" through "v)" in each. Figure 5 has been amended to identify the step components of the figure as "i)" through "vi)". Figure 12 has been amended to identify the step components of the figure as "a)" through "f)". Figure 13 has been amended to identify the two views as "a)" and "b)". Figure 15 has been amended to identify the step components of the figure as "i)" through "vii)". Figure 16A has been amended to identify the step components of the figure as "i)" through "ix)". Figure 16B has been amended to identify the step components of the figure as "a)" through "c)" and to move the partially obscured "Bottom contact" and "Metal" text so that they are not obscured. Figure 17 has been amended to identify the step components of the figure as "i)" through "vii)". Figure 18 has been amended to identify the respective sub-figures as "a)", "b)" and "c)". Figure 19 has been amended to identify the step components of the figure as "i)" through "vi)". Figure 20A has been amended to identify the step components of the figure as "i)" through "iv)". Figure 20B has been amended to identify the step components of the figure as "i)" and "ii)". Figure 22 has been amended to identify the step components of the figures as "i)" through "viii)". Figure 23 has been amended to identify the sub-figures as "i)" through "v)".

It is respectfully submitted that the above remarks and referenced amendments obviate the objections to the drawings and withdrawal is respectfully requested.

Claim Rejections

Applicants appreciate the indication of the allowability of claims 4, 5 and 9-11.

Applicants also respectfully traverse the art rejections as issued. However, in order to expedite issuance of allowable claims, indicated allowable claims 4, 9 and 10 have each been amended to rewrite those claims in independent form, and non-allowed claims 1-3 and 13-19 have been cancelled without prejudice to continue prosecution of those claims in a continuation application.

Accordingly, it is respectfully submitted that, as to the now pending claims, all of the art rejections are now moot.

New dependent claims 20-27 have been added and depend from one or more of now allowable independent claims 4, 9 and/or 10. It is respectfully submitted that those claim are also allowable by virtue of their direct, or indirect, dependency from allowable independent claim 4, 9 and/or 10. In addition, it is respectfully submitted that some of the dependent claims are also independently allowable by virtue of their adding those aspects deemed allowable in claims 4, 5, 9, 10 and 11 when they were written in dependent form.

Allowance of all the pending claims is respectfully solicited.

CONCLUSION

In view of the above it is respectfully submitted that the objections have been overcome and that all of the claims are now allowable and allowance of the claims are therefore respectfully requested.

If the Examiner believes that any of the pending claims present any issues which could be resolved by a further telephone interview, the Examiner is respectfully urged to telephone the

undersigned's direct line at (212) 415-8500. Alternatively, the undersigned may be contacted by e-mail at rstraussman@morganfinnegan.com.

Finally, it is respectfully noted that, as filed, the instant application included multiple dependent claims for which the multiple dependency fee was paid. At the time of filing, applicants were entitled to claim small entity status. However, in June 2002, the status of the assignee of the instant application may have changed such that they could not claim small entity status in the future. Accordingly, while it is respectfully believed that no further multiple dependent claim fee is due, in the event that this belief is incorrect and some further differential is due as a result of the status change, the Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this amendment on the merits, or credit any overpayment to Deposit Account No. 13-4500, Order No. 4024-4021.

Respectfully submitted,

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APPENDIX

IN THE SPECIFICATION

Trenches 506 are etched to process a wafer into individual devices (by etching into the substrate) or, in some cases, into appropriate groups of devices, for example, as shown in a commonly assigned application serial number 09/896,797 entitled Redundant Device Array filed concurrently herewith (and which is incorporated herein by reference) by etching into the substrate in some places while stopping the etch prior to it reaching the substrate in others.

IN THE CLAIMS

4. (Amended) [The method of claim 1 further comprising:] A method of creating a hybridized chip combining a top active optical device chip, having a substrate including a first side and active device contacts on top active devices located on the first side, the top active optical devices also being on the first side, with an electronic chip having electronic chip contacts, when at least some of the active device contacts are not aligned with at least some of the electronic chip contacts when the top active optical device chip and the electronic chip are superimposed, each of the at least some active device contacts having an electrically corresponding electronic chip contact, the method comprising:

attaching a carrier to the top active optical device;

creating sidewalls defining openings in the substrate extending from the active device contacts on the first side through the substrate to a bottom side of the substrate opposite the first side at points on the bottom side substantially coincident with the active device contacts on the top side;

making the sidewalls electrically conductive to form electrically conductive paths from
the active device contacts to the points; and
connecting the points to locations correspondingly aligned with the at least some
electronic chip contacts with an electrically conductive material located on the bottom side of the
active optical device chip.

6. (Amended) The method of claim 4, 5, 20 or 21 wherein the connecting comprises:
patterning traces between the points and the locations correspondingly aligned with the at
least some electronic chip contacts, and
making the traces electrically conductive.

9. (Amended) [The method of claim 1 further] A method of creating a hybridized chip
combining a top active optical device chip, having a substrate including a first side and active
device contacts on top active devices located on the first side, the top active optical devices also
being on the first side, with an electronic chip having electronic chip contacts, when at least
some of the active device contacts are not aligned with at least some of the electronic chip
contacts when the top active optical device chip and the electronic chip are superimposed, each
of the at least some active device contacts having an electrically corresponding electronic chip
contact, the method comprising:

thinning the substrate;

creating sidewalls defining openings in the substrate extending from the active device
contacts on the first side through the substrate to a bottom side of the substrate opposite the first

side at points on the bottom side substantially coincident with the active device contacts on the top side;

making the sidewalls electrically conductive to form electrically conductive paths from the active device contacts to the points; and

connecting the points to locations correspondingly aligned with the at least some electronic chip contacts with an electrically conductive material located on the bottom side of the active optical device chip.

10. (Amended) [The method of claim 1 further] A method of creating a hybridized chip combining a top active optical device chip, having a substrate including a first side and active device contacts on top active devices located on the first side, the top active optical devices also being on the first side, with an electronic chip having electronic chip contacts, when at least some of the active device contacts are not aligned with at least some of the electronic chip contacts when the top active optical device chip and the electronic chip are superimposed, each of the at least some active device contacts having an electrically corresponding electronic chip contact, the method comprising:

attaching a carrier having a thickness greater than a minimum lasing thickness over the top active device;

creating sidewalls defining openings in the substrate extending from the active device contacts on the first side through the substrate to a bottom side of the substrate opposite the first side at points on the bottom side substantially coincident with the active device contacts on the top side;

making the sidewalls electrically conductive to form electrically conductive paths from
the active device contacts to the points; and
connecting the points to locations correspondingly aligned with the at least some
electronic chip contacts with an electrically conductive material located on the bottom side of the
active optical device chip.

12. (Amended) A hybridized chip comprising:
at least one top active optical device coupled to an electronic chip, the hybridized chip
having been created using the method of one of claims 4-11, or 20-27 [1-11].